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10/828,470	04/21/2004	Tomotoshi Kanatsu	00862.023668.	5344

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EXAMINER
LOVEL, KIMBERLY M

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Office Action Summary	Application No.	Applicant(s)
		10/828,470	KANATSU, TOMOTOSHI
		Examiner	**Art Unit**
		Kimberly Lovel	2167

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>06 July 2007</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-8,10 and 12-18</u> is/are pending in the application.

   4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-8,10 and 12-18</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

   Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

   Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   a)☐ All   b)☐ Some * c)☐ None of:

   1.☐ Certified copies of the priority documents have been received.

   2.☐ Certified copies of the priority documents have been received in Application No. _____.

   3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

   * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
   Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
   Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

1.   Claims 1-8, 10 and 12-18 are rejected.

Continued Examination Under 37 CFR 1.114

2.   A request for continued examination under 37 CFR 1.114, including the fee set

forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this

application is eligible for continued examination under 37 CFR 1.114, and the fee set

forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action

has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 6 July

2007 has been entered.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

3.   **Claims 1-5, 7, 8, 10, 12, 13 and 15-18 are rejected under 35 U.S.C. 103(a) as**

being unpatentable over US Patent No 5,911,139 to Jain et al (hereafter Jain et al)

in view of US PGPub 2002/0136449 to Park et al (Park) in view of US Patent No

6,961,463 to Loui et al (hereafter Loui).

Referring to claim 1, Jain et al discloses an image processing method implemented by a computer for selectively storing an input image in a database, comprising the steps of:

(a) acquiring first search information [alpha-numeric query] associated with the input image on the basis of information input by a user (see column 9, lines 11-15);

(b) acquiring feature data [feature vector] contained in the input image as second search information (see column 9, lines 45-48);

(c) searching for an original data file corresponding to the input image in the database by using the first [alpha-numeric query] and second [feature vector] search information (see column 9, lines 52-67); and

(d) converting the input image into vector data and storing the vector data in the database [database 132] (Jain: see column 9, lines 40-52).

However, Jain et al fails to explicitly disclose the further limitation of wherein said second search information comprises a total number of blocks obtained by region segmentation of the input image, and it is determined whether said total number of block falls within a predetermined range. Park discloses searching a database of images utilizing an input image and the concept of segmentation (see abstract), including the further limitation of wherein said second search information comprises a total number of blocks obtained by region segmentation of the input image (see [0054]), and it is determined whether said total number of block falls within a predetermined range [number of segmented regions in the query image retrieval image is greater than the number of segmented regions in the object extraction target image] (see [0055]).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the concept of comparing the number of regions as disclosed by Park with the steps of searching by features as disclosed by Jain et al. One would have been motivated to do so in order to increase the efficiency of accurately searching for an image in a database, which contains a larger amount of images (Park: see [0007]).

However, the combination of Jain et al and Park (hereafter Jain/Park) fails to explicitly disclose the further limitation of (d) wherein the image is only stored in a case where the original file corresponding to the input is not found in said step (c); and (e) declining to store the input image data into the database, in a case that the image file corresponding to the input image is found in said step (c). Loui discloses a duplicate detection algorithm to determine whether two pictures are so similar that a consumer would only put one of them in the album [database], including the further limitations of wherein the image is only stored in a case where the image file corresponding to the input is not found in said step (c); and (e) declining to store the input image data into the database, in a case that the image file corresponding to the input image is found in said step (c) (see column 4, lines 11-51) since the concept of storing only one copy of an image increases storage efficiency and search efficiency.

It would have been obvious to one of ordinary skill in the art at the time of the invention to utilize the duplicate detection algorithm of Loui with the storage system of Jain/Park. One would have been motivated to do since the methodology of Loui can be embodied in any different types of systems (Loui: see column 7, lines 13-24) and since

the concept of storing only one copy of an image increases storage efficiency and

search efficiency.

Referring to claim 2, the combination of Jain/Park and Loui (hereafter

Jain/Park/Loui) discloses the method according to claim 1, further comprising the step

of: (f) registering the first search information as an index [index value] for searching for

the original data file in an index file (Jain: see column 7, lines 27-32).

Referring to claim 3, Jain/Park/Loui discloses the method according to claim 1,

wherein the first search information comprises a keyword [keywords] for searching

using the input image (Jain: see Fig 3, item 201 and column 9, lines 11-15).

Referring to claim 4, Jain/Park/Loui discloses the method according to claim 1,

wherein the first search information comprises a data size [file size] of the original data

file (Jain: see Fig 3, item 201 and column 9, lines 11-15).

Referring to claim 5, Jain/Park/Loui discloses the method according to claim 1,

wherein the first search information comprises date information [File Date] of the original

data file (Jain: see Fig 3, item 201 and column 9, lines 11-15).

Referring to claim 7, Jain/Park/Loui discloses the method according to claim 1,

wherein the second search information comprises a character code of a character

recognition [face recognition] result which is obtained by performing a character

recognition process with respect to a character region in the input image (Jain: see

column 25, lines 31-41).

Referring to claim 8, Jain/Park/Loui discloses the method according to claim 1,

wherein the second search information further comprises feature data of each block

obtained by the region segmentation of the input image (Park: see [0010] and [0036]).

Referring to claim 10, Jain/Park/Loui discloses the method according to claim 1,

further comprising the step of: (f) converting the input image, which has been converted

into the vector data, into data in a format which can be handled by application software

(Jain: see column 31, lines 12-14).

Referring to claim 12, Jain/Park/Loui discloses the method according to claim

10, further comprising the step of: (g) registering the first search information, in an index

file, as an index [index value] for searching for an image represented by the vector data

stored in the database in the step (d) (Jain: see column 7, lines 27-32).

Referring to claim 13, Jain/Park/Loui discloses the method according to claim 1,

further comprising the step of: (f) outputting the original data file, wherein pointer

information is added to the original data file (Jain: see column 14, lines 7-19).

Referring to claim 15, Jain/Park/Loui discloses the method according to claim 1,

wherein in the step (c), the original data file is searched for by using at least one of

keyword search [keywords], full-text search, and layout search (see Fig 3, item 201 and

column 9, lines 11-15).

Referring to claim 16, Jain et al discloses an image processing system

selectively stores an image file corresponding to an input image, comprising:

an input unit constructed to input acquiring first search information [alpha-

numeric query] associated with the input image (see column 9, lines 11-15);

a unit constructed to search for acquiring feature data [feature vector] contained

in the input image as second search information (see column 9, lines 45-48);

a search unit constructed to search for an original data file corresponding to the

input image in a database by using the first [alpha-numeric query] and second [feature

vector] search information (see column 9, lines 52-67); and

a unit constructed to convert the input image into vector data and to store the

vector data in the database [database 132] (Jain: see column 9, lines 40-52).

However, Jain et al fails to explicitly disclose the further limitation of wherein said

second search information comprises a total number of blocks obtained by region

segmentation of the input image, and it is determined whether said total number of

block falls within a predetermined range. Park discloses searching a database of

images utilizing an input image and the concept of segmentation (see abstract),

including the further limitation of wherein said second search information comprises a

total number of blocks obtained by region segmentation of the input image (see [0054]),

and it is determined whether said total number of block falls within a predetermined

range [number of segmented regions in the query image retrieval image is greater than

the number of segmented regions in the object extraction target image] (see [0055]).

It would have been obvious to one of ordinary skill in the art at the time the

invention was made to utilize the concept of comparing the number of regions as

disclosed by Park with the steps of searching by features as disclosed by Jain et al.

One would have been motivated to do so in order to increase the efficiency of

accurately searching for an image in a database, which contains a larger amount of images (Park: see [0007]).

However, Jain/Park fails to explicitly disclose the further limitation of wherein the original data file is only stored in a case where the original data file corresponding to the input is not found by said search unit; and a unit constructed to decline storing the input image data into the database, in a case that the original data file corresponding to the input image file is found by said search unit. Loui discloses a duplicate detection algorithm to determine whether two pictures are so similar that a consumer would only put one of them in the album [database], including the further limitations of wherein the image is only stored in a case where no original data file corresponding to the input image is found by said search unit; and a unit constructed to decline storing the input image data into the database, in a case that the original data file corresponding to the input image file is found by said search unit (see column 4, lines 11-51) since the concept of storing only one copy of an image increases storage efficiency and search efficiency.

It would have been obvious to one of ordinary skill in the art at the time of the invention to utilize the duplicate detection algorithm of Loui with the storage system of Jain/Park. One would have been motivated to do since the methodology of Loui can be embodied in any different types of systems (Loui: see column 7, lines 13-24) and since the concept of storing only one copy of an image increases storage efficiency and search efficiency.

Referring to claim 17, Jain et al discloses a computer executable program

stored on a computer-readable medium for selectively storing an image file

corresponding to an input image, comprising:

code [alpha-numeric query input module 106] for acquiring first search

information [alpha-numeric query] associated with the input image on the basis of

information input by a user (see column 9, lines 11-15);

code [Query Canvas module 108 or Image Browsing Module 110] for acquiring

feature data [feature vector] contained in the input image as second search information

(see column 9, lines 45-48);

code [VIR Engine 120 comprises modules] for searching for an original data file

corresponding to the input image in a database by using the first [alpha-numeric query]

and second [feature vector] search information (see column 9, lines 40-41 and 52-67);

and

code for converting the input image into vector data and to store the vector data

in the database [database 132] (Jain: see column 9, lines 40-52).

However, Jain et al fails to explicitly disclose the further limitation of wherein said

second search information comprises a total number of blocks obtained by region

segmentation of the input image, and it is determined whether said total number of

block falls within a predetermined range. Park discloses searching a database of

images utilizing an input image and the concept of segmentation (see abstract),

including the further limitation of wherein said second search information comprises a

total number of blocks obtained by region segmentation of the input image (see [0054]),

and it is determined whether said total number of block falls within a predetermined

range [number of segmented regions in the query image retrieval image is greater than

the number of segmented regions in the object extraction target image] (see [0055]).

It would have been obvious to one of ordinary skill in the art at the time the

invention was made to utilize the concept of comparing the number of regions as

disclosed by Park with the steps of searching by features as disclosed by Jain et al.

One would have been motivated to do so in order to increase the efficiency of

accurately searching for an image in a database, which contains a larger amount of

images (Park: see [0007]).

However, Jain/Park fails to explicitly disclose the further limitation of wherein the

image is only stored in a case where the original data file corresponding to the input is

not found by said search unit; and code for declining storing the input image data into

the database, in a case that the original data file corresponding to the input image file is

found by said search unit. Loui discloses a duplicate detection algorithm to determine

whether two pictures are so similar that a consumer would only put one of them in the

album [database], including the further limitations of wherein the image is only stored in

a case where no original data file corresponding to the input image is found by said

search unit; and code for declining storing the input image data into the database, in a

case that the original data file corresponding to the input image file is found by said

search unit (see column 4, lines 11-51) since the concept of storing only one copy of an

image increases storage efficiency and search efficiency.

It would have been obvious to one of ordinary skill in the art at the time of the

invention to utilize the duplicate detection algorithm of Loui with the storage system of

Jain/Park. One would have been motivated to do since the methodology of Loui can be

embodied in any different types of systems (Loui: see column 7, lines 13-24) and since

the concept of storing only one copy of an image increases storage efficiency and

search efficiency.

Referring to claim 18, Jain et al discloses a computer-readable medium having

a computer executable program stored thereon for search for an original data file

corresponding to an input image, the program comprising:

code [alpha-numeric query input module 106] for acquiring first search

information [alpha-numeric query] associated with the input image on the basis of

information input by a user (see column 9, lines 11-15);

code [Query Canvas module 108 or Image Browsing Module 110] for acquiring

feature data [feature vector] contained in the input image as second search information

(see column 9, lines 45-48); and

code [VIR Engine 120 comprises modules] for searching for an original data file

corresponding to the input image by using the first [alpha-numeric query] and second

[feature vector] search information (see column 9, lines 40-41 and 52-67); and

code for converting the input image into vector data and to store the vector data

in the database [database 132] (Jain: see column 9, lines 40-52).

However, Jain et al fails to explicitly disclose the further limitation of wherein said

second search information comprises a total number of blocks obtained by region

segmentation of the input image, and it is determined whether said total number of

block falls within a predetermined range. Park discloses searching a database of

images utilizing an input image and the concept of segmentation (see abstract),

including the further limitation of wherein said second search information comprises a

total number of blocks obtained by region segmentation of the input image (see [0054]),

and it is determined whether said total number of block falls within a predetermined

range [number of segmented regions in the query image retrieval image is greater than

the number of segmented regions in the object extraction target image] (see [0055]).

It would have been obvious to one of ordinary skill in the art at the time the

invention was made to utilize the concept of comparing the number of regions as

disclosed by Park with the steps of searching by features as disclosed by Jain et al.

One would have been motivated to do so in order to increase the efficiency of

accurately searching for an image in a database, which contains a larger amount of

images (Park: see [0007]).

However, Jain/Park fails to explicitly disclose the further limitation of wherein the

image is only stored in a case where the image file corresponding to the input is not

found by said search unit; and code for declining storing the input image data into the

database, in a case that the image file corresponding to the input image file is found by

said search unit. Loui discloses a duplicate detection algorithm to determine whether

two pictures are so similar that a consumer would only put one of them in the album

[database], including the further limitations of wherein the image is only stored in a case

where no image file corresponding to the input image is found by said search unit; and

code for declining storing the input image data into the database, in a case that the

image file corresponding to the input image file is found by said search unit (see column

4, lines 11-51) since the concept of storing only one copy of an image increases storage

efficiency and search efficiency.

It would have been obvious to one of ordinary skill in the art at the time of the

invention to utilize the duplicate detection algorithm of Loui with the storage system of

Jain/Park. One would have been motivated to do since the methodology of Loui can be

embodied in any different types of systems (Loui: see column 7, lines 13-24) and since

the concept of storing only one copy of an image increases storage efficiency and

search efficiency.

4.   **Claims 6 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable
over US Patent No 5,911,139 to Jain et al in view of US PGPub 2002/0136449 to
Park et al in view of US Patent No 6,961,463 to Loui et al as applied to claim 13
above, and further in view of US Patent No 7,010,144 to Davis et al (hereafter
Davis et al).**

Referring to claim 6, Jain/Park/Loui discloses second search information.

However, Jain et al fails to explicitly disclose the further limitation wherein the second

search information comprises information associated with a storage location of the

original data file which is extracted on the basis of pointer information in the input

image. Davis et al also disclose second search information (see column 13, lines 5-14),

including the further limitation wherein the second search information comprises

information associated with a storage location [address] of the original data file which is extracted on the basis of pointer information in the input image (see column 9, lines 1-16) in order to increase the efficiency and accuracy of locating the original data file.

It would have been obvious to one of ordinary skill in the art at the time if the invention to use the feature the second information being associated with an address location as disclosed by Davis et al as the second search information of Jain/Park/Loui. One would have been motivated to do so in order to increase the efficiency and accuracy of locating the original data file.

Referring to claim 14, Jain/Park/Loui discloses pointer information. However, Jain et al fail to explicitly disclose the further limitation wherein the pointer information is added as a digital watermark to the original data file. Davis et al also disclose pointer information (see column 14, lines 11-23), including the further limitation wherein the pointer information is added as a digital watermark to the original data file (see column 1, lines 29-35) in order to embed auxiliary data, which may include one or more references, a machine instruction or set of instructions, and other data items about the image into the image.

It would have been obvious to one of ordinary skill in the art at the time if the invention to use the feature of a digital watermark as disclosed by Davis et al as the pointer information of Jain/Park/Loui. One would have been motivated to do so in order to embed auxiliary data, which may include one or more references, a machine instruction or set of instructions, and other data items about the image into the image.

Conclusion

5.   The prior art made of record and not relied upon is considered pertinent to

applicant's disclosure.

- US Patent No 6,754,675 titled "Image Retrieval System" to Abdel-Mottaleb et al

- US PGPub 2002/0181768 titled "Method for Designating Local Representative

  Color Value and Auto-Determining Detection Algorithm on Color Image" to Kim et

  al

- US Patent No 6,246,804 titled "Image Retrieval Method and Apparatus Using a

  Compound Image Formed from a Plurality of Detected Regions" to Sato et al

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kimberly Lovel whose telephone number is (571) 272-2750. The examiner can normally be reached on 8:00 - 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Cottingham can be reached on (571) 272-7079. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Kimberly Lovel
Examiner
Art Unit 2167

30 September 2007
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